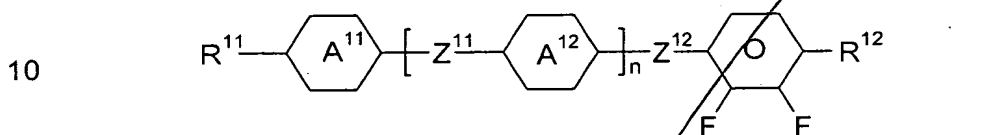


## Patent Claims

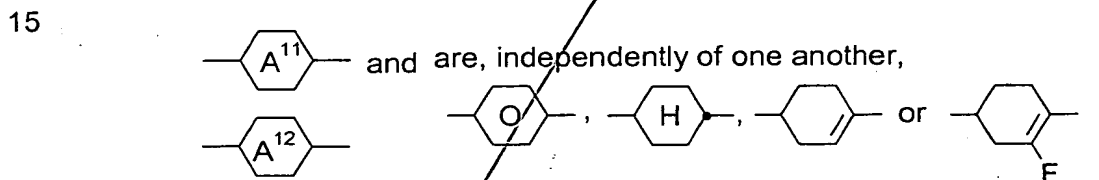
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1. A nematic liquid-crystal medium, which comprises

- a) a dielectrically negative, liquid-crystalline component A which comprises one or more dielectrically negative compounds of the formula I



in which



~~R<sup>11</sup> is alkyl having from 1 to 7 carbon atoms, alkoxy having from 1 to 7 carbon atoms or alkenyloxy having from 2 to 7 carbon atoms,~~

R<sup>12</sup> is alkyl or alkoxy having from 1 to 7 carbon atoms or alkenyl, alkenyloxy or alkoxyalkyl having from 2 to 7 carbon atoms,

one of  $Z^{11}$  and  $Z^{12}$  is  $OCF_2$  or  $CF_2O$ , and the other is a single bond, and

$n /$  is 0 or 1, and

- b) a dielectrically negative, liquid-crystalline component,  
B and

*optimal*  
c)

d)

a dielectrically neutral, liquid-crystalline component C,  
and  
a dielectrically positive, liquid-crystalline component D.

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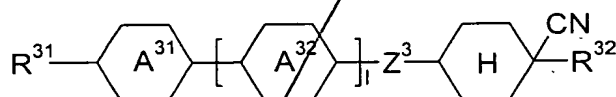
2. A liquid-crystal medium of claim 1, wherein component B comprises one or more compounds selected from the group consisting of the compounds of the formulae II and III

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II

15



III

in which

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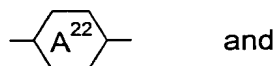
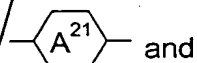
$R^{21}$  is alkyl or alkoxy having from 1 to 7 carbon atoms or alkoxyalkyl, alkenyl or alkenyloxy having from 2 to 7 carbon atoms,

25

$R^{22}$  is alkyl or alkoxy having from 1 to 7 carbon atoms or alkoxyalkyl, alkenyl or alkenyloxy having from 2 to 7 carbon atoms,

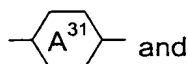
30

$Z^{21}$  and  $Z^{22}$  are each, independently of one another,  $-\text{CH}_2-\text{CH}_2-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{C}\equiv\text{C}-$ ,  $-\text{COO}-$  or a single bond,

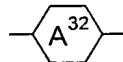


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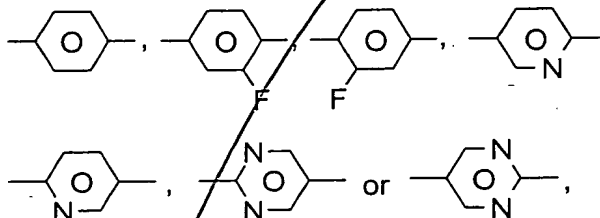
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and



are each, independently of one another,



$L^{21}$  and  $L^{22}$

are both C-F or one of the two is N and the other is C-F,

$m$

is 0 or 1,

$Z^3$

is  $-\text{CH}_2-\text{CH}_2-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{C}\equiv\text{C}-$ ,  $-\text{COO}-$  or a single bond,

$R^{31}$  and  $R^{32}$

are each, independently of one another, alkyl or alkoxy having from 1 to 7 carbon atoms or alkoxy-alkyl, alkenyl or alkenyloxy having from 2 to 7 carbon atoms, and

$l$

is 1 or 2.

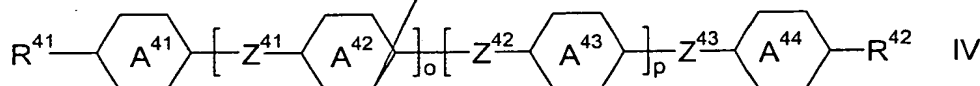
3. A liquid-crystal medium of Claim 2, which comprises one or more compounds of the formula II.

4. A liquid-crystal medium of Claim 2 which comprises one or more compounds of the formula III.

5. A liquid-crystal medium of Claims 1 which comprises a component C.

6. A liquid-crystal medium of Claim 1, which comprises a component D.

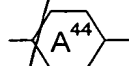
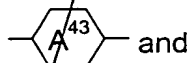
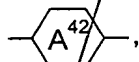
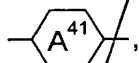
7. An electro-optical display comprising a liquid-crystal medium according of Claim 1.
8. A display according to Claim 7, which is an active matrix display.
9. A display according to Claim 7 which is an ECB or IPS display.
10. The liquid-crystal medium of claim 1, wherein  $R^{11}$  is alkyl, alkoxy, or alkenyloxy of Z to 4 carbon atoms and one of  $Z^{11}$  or  $Z^{12}$  is  $OCF_2$ .
11. The liquid-crystal medium of claim 5, wherein component C comprises at least one compound of the formula IV.



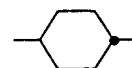
in which

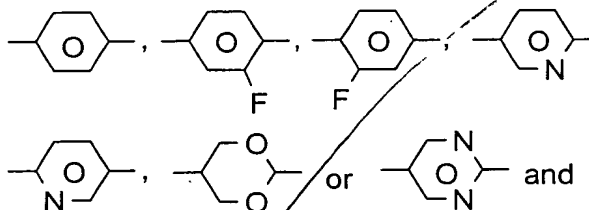
$R^{41}$  and  $R^{42}$  are each, independently of one another, as defined above for  $R^{21}$  in the case of the formula II,

$Z^{41}$ ,  $Z^{42}$  and  $Z^{43}$  are each, independently of one another,  $-\text{CH}_2\text{CH}_2-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{COO}-$  or a single bond,



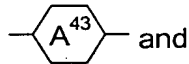
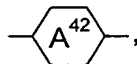
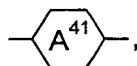
are each, independently of one another,



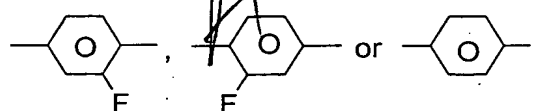
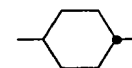


o and p, independently of one another, are 0 or 1,

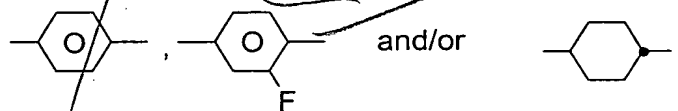
12. The liquid-crystal medium of claim 6, wherein component D comprises at least one compound of the formula V.



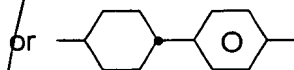
are each, independently of one another,



and very particularly preferably at least two of these rings

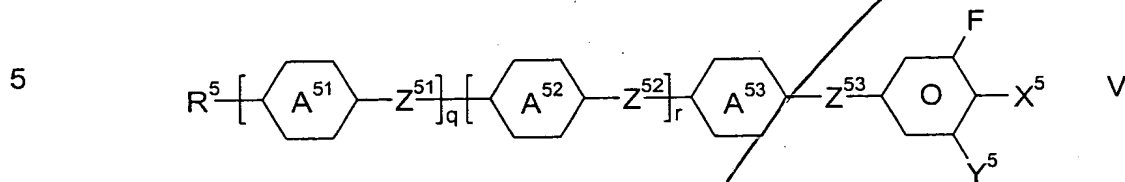


where two adjacent rings are very particularly preferably linked directly to one another, preferably



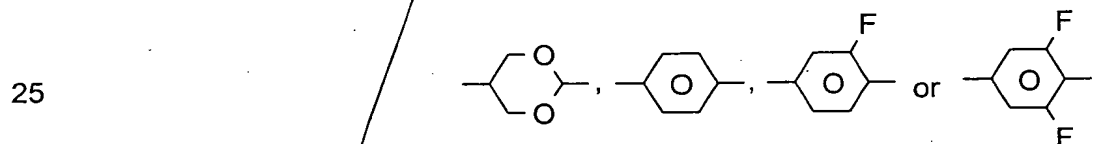
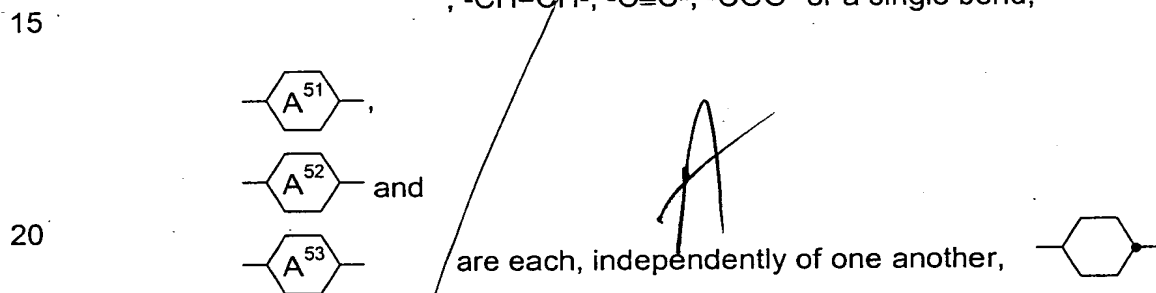
and optionally

d) one or more dielectric positive compound(s) of the formula V



10  $R^5$  is alkyl or alkoxy having from 1 to 7 carbon atoms, or alkoxyalkyl, alkenyl or alkenyloxy having from 2 to 7 carbon atoms,

15  $Z^{51}$ ,  $Z^{52}$  and  $Z^{53}$  are each, independently of one another,  $-\text{CH}_2-\text{CH}_2-$ ,  $-\text{CH}=\text{CH}-$ ,  $-\text{C}\equiv\text{C}-$ ,  $-\text{COO}-$  or a single bond,



30  $X^5$  is F,  $\text{OCF}_2\text{H}$  or  $\text{OCF}_3$ , and

$Y^5$  is H or F, preferably F in the case where  $X = \text{F}$  or  $\text{OCF}_2\text{H}$ , and

35  $q$  and  $r$  are each, independently of one another, 0 or 1.

In a further preferred embodiment, the medium comprises one or more dielectrically negative compounds of the formula VI.

13. The liquid-crystal medium of claim 1, which comprises 5% to 85% by weight of component A, 5% to 85% by weight of component B, 0 to 50% by weight of component C and 0 to 40% by weight of component D.

14. A. display according to claim 8, which further comprises a this film transistor or varistor.

15. A display according to claim 7, which further comprises a three-pole switching element.

Add  
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